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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/620,376

07/17/2003

Tomokazu Hayashi

10517/173

9710

23838 7590 10/24/2008

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EXAMINER

HODGE, ROBERT W

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

10/24/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/620,376	<b>Applicant(s)</b> HAYASHI ET AL.	
	<b>Examiner</b> ROBERT HODGE	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,8-14 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,8-14 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/12/08 has been entered.

### ***Response to Arguments***

Applicant's arguments filed 9/12/08 have been fully considered but they are not persuasive. Applicants state that Schmid does not teach a sealant on one of the gas passage plates of the fuel cell. With regards to the newly added limitation, it is quite clear that Schmid is using the same sealant 50 throughout the entire fuel cell and that said same sealant is also used on one of the components that has the gas passages, see Figures 3a, 3b, 3c, 5a and 5b. Applicants further state that Schmid does not teach a manifold for separating each passage in at least one of the components, such as is outlined in newly added claim 22. However claim 22 recites that the sealant is disposed at both sides of the manifold, which is contrary to applicants' argument. As seen in figure 5a, the sealant 50 is disposed on both sides of manifold 30. Applicants also reiterate their arguments regarding a gel material as the sealant, applicants are directed to the response to arguments in the final office action dated 5/22/08. Therefore the

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previous rejections will be maintained. Applicants reiterate that no motivation has been provided to obviate the shape of the instantly claimed invention, applicants are again directed to the response to arguments in the final office action dated 5/22/08 as well as the fourth full paragraph in the 103 rejection below, which has already been provided to applicants.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 3, it is unclear how “the surfaces facing each other” can exist when there is only one surface being recited in the claim. As long as the prior art teaches either the retaining portion formed on one surface of a component it will read on claim 3 as recited.

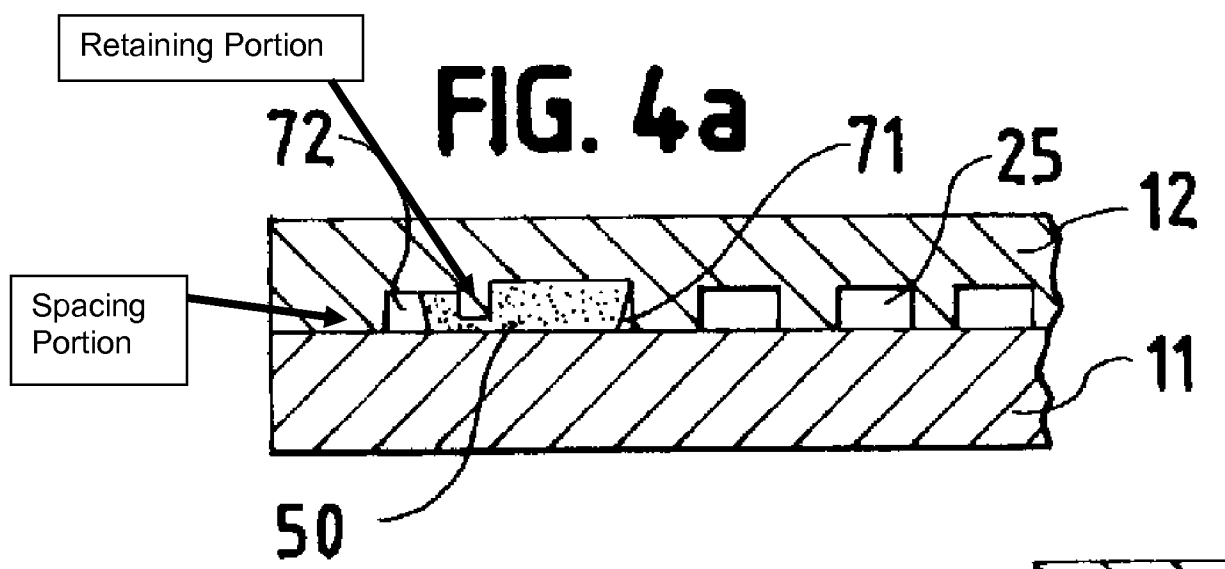
***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 4, 8-14 and 17-22 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,080,503 hereinafter Schmid.

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Schmid teaches solid polymer electrolyte fuel cell stacks (which as defined by applicants in the instant specification paragraph [0048] is a low temperature type fuel cell) comprising a plurality of components including but not limited to separators and electrolyte membranes with an adhesive material (inherently pressure sensitive) that is elastomeric and is selected for its specific compatibility of physical and chemical characteristics to be used in solid polymer electrolyte fuel cell stacks, said adhesive material being adhesive and interposed between the plurality of fuel cell components wherein a retaining portion and a spacing portion are formed on a surface of a separator plate (illustrated in figure 4a below);



wherein the spacing portion is formed along an outer periphery of the separator, wherein the adhesive material, the spacing portion and the retaining portion are all formed within the fuel cell unit, the stack further comprising manifolds that are formed inside the electrochemically active area and the adhesive material is formed along the outer edge (see column 6, lines 43-46) (since the spacing portion is clearly at an outer

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periphery of the entire fuel cell unit and the manifold is formed at an interior position such as the electrochemically active area, the spacing portion will clearly be formed outside of the manifold) (see figure 4a, column 1, lines 55-61, column 2, lines 30-33, column 5, lines 12-46, column 6, line 22 – column 8, line 67). Schmid further teaches that the adhesive material can be electrically insulating and is applied across the substantial entire contact surfaces of the separator plates (see column 5, lines 25-26 and line 34 and column 8, lines 35-36). It is also quite clear that Schmid is using the same sealant 50 throughout the entire fuel cell and that said same sealant is also used on one of the components that has the gas passages, see Figures 3a, 3b, 3c, 5a and 5b

Schmid as described above teaches the claimed invention except for a spacing portion formed separately from the plurality of components and a retaining portion formed concave or convex toward the sealant. With regards to these features the Examiner has found no criticality of either of the above listed features in the instant specification. For Example in paragraph [0054] the first sentence describes that the spacing portion may be integrally or separately formed. There is no disclosure of whether one formation is more critical than the other and furthermore the discussion of separately forming is only mentioned in the first sentence of paragraph [0054] and is not even illustrated in the drawings. Also in paragraph [0056] it is stated that “Rather than being such a concave or convex portion, the retaining portion 33 may merely be a plane portion...” this too shows no criticality to the shape of the retaining portion. Therefore it would have been obvious to one having ordinary skill in the art to separately form the spacing portion of Schmid since it has been held that constructing a formerly integral

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structure in various elements involves only routine skill in the art (Nerwin v. Erlichman, 168 USPQ 177, 179) and it further would have been obvious to one having ordinary skill in the art to form the retaining portion in either a convex or concave shape since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art (In re Dailey 149 USPQ 47, 50 (CCPA 1966) and Glue Co. v. Upton 97 US 3, 24 (USSC 1878)).

Regarding claim 3, Schmid teaches a second retaining portion 55 on another component of the fuel cell stack, see figure 3b.

Regarding claim 8, Schmid teaches the claimed invention except for another spacing portion on another component. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to an additional spacing portion on another component of the fuel cell of Schmid, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. It should be noted that due to the many different embodiments disclosed in the instant specification embodying, 1, 2, 3, 4...etc spacing portions on separate components of the fuel cell no criticality is shown for having two spacing portions.

Regarding claim 22, as seen in figure 5a, Schmid teaches that the sealant 50 is disposed on both sides of manifold 30.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmid as applied to claim 1 above, and further in view of U.S. Pre-Grant Publication No. 2002/0197519 hereinafter Einhart.

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Schmid does not teach that the retaining portion is concave or convex.

As seen in figures 8 and 9, Einhart teaches a concave retaining portion for a seal in a fuel cell assembly.

As stated above no criticality of the shape of the retaining portion has been found in the instant specification for said feature such as in paragraph [0056] wherein it states that "Rather than being such a concave or convex portion, the retaining portion 33 may merely be a plane portion..." and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to form the retaining portion in a concave shape in Schmid as taught by Einhart to provide a complex cross-sectional shape to retain the sealing material that provides a larger surface area for the sealing material to bond to and also since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art (In re Dailey 149 USPQ 47, 50 (CCPA 1966) and Glue Co. v. Upton 97 US 3, 24 (USSC 1878)).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/  
Examiner, Art Unit 1795